The Year in Forestry

State and Private Forestry in the Northeast and Midwest

Fiscal Year 2006

United States
Department of Agriculture
Forest Service
Northeastern Area
State and Private Forestry
NA-IN-01-07
Newtown Square, PA
May 2007

The Year in Forestry

State and Private Forestry in the Northeast and Midwest

Fiscal Year 2006

United States Department of Agriculture

Forest Service

Northeastern Area
State and Private Forestry
11 Campus Boulevard, Suite 200
Newtown Square, PA 19073

NA-IN-01-07
May 2007
www.na.fs.fed.us

Table of Contents

Executive Summary 1

Introduction 4

The Changing Forest 7

Strategic Priorities 9

Agents of Change—Making a Difference in 2006 10

Program Accomplishments 12

- Forest Health Management Program 12
- Cooperative Fire Protection Program 16
- Landowner Assistance Programs 20
- Watershed Forestry 23
- Forest Legacy Program 26
- Urban and Community Forestry Program 29
- Forests and the Economy 32
- Grey Towers National Historic Site 34

Taking Action Against Climate Change 37

Appendix I. Investment in State and Private Forestry Programs by the Northeastern Area 40

Appendix II. Selected Facts and Accomplishments 41

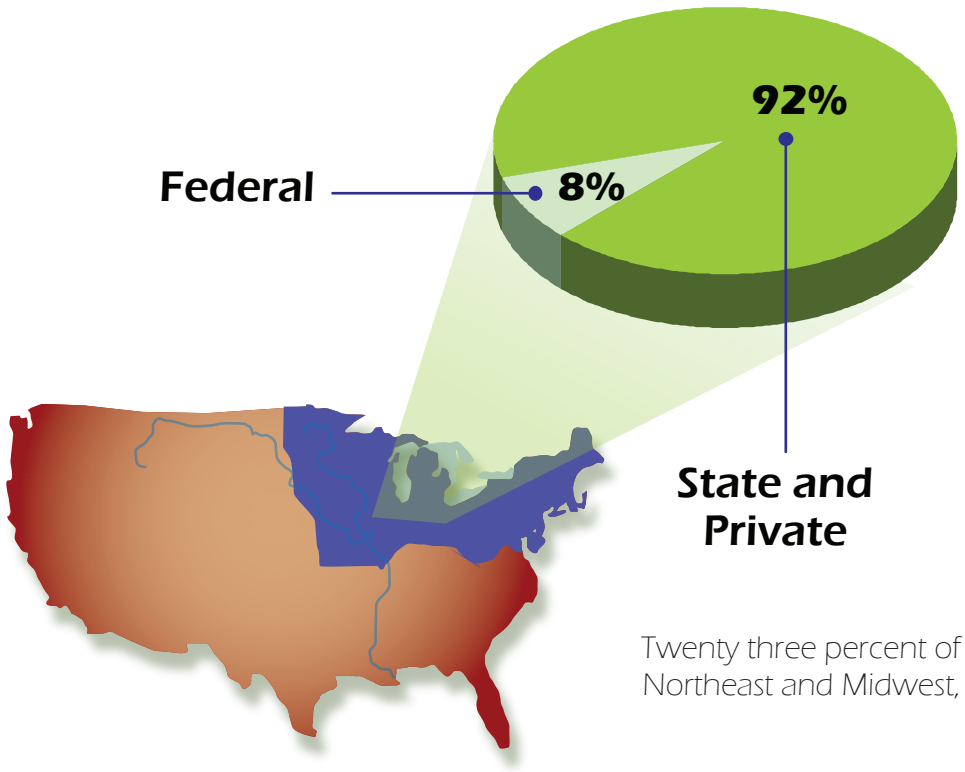
Executive Summary

The Year in Forestry
State and Private Forestry in the Northeast and Midwest
Fiscal Year 2006

The Northeastern Area, a field unit of the Forest Service, U.S. Department of Agriculture, provides technical and financial assistance to 20 States in the Northeast and Midwest, and the District of Columbia. Our mission is to assist States, private forest landowners, communities, and others, to sustainably manage, protect, and restore forests.

The part of the country where we work is home to nearly half of the Nation's citizens and many of its major cities. Almost one quarter of the country's forests grow here, and more than 92 percent of them are in state or private ownership. The region is steeped in a long history of forest management and use. Forests cover over 40 percent of the land, and private forests (75 percent of all forest land in the region) provide a wide array of public as well as private benefits.

Forest Ownership in the Northeast and Midwest



Twenty three percent of all U.S. forests are in the Northeast and Midwest, and most of these have non-Federal owners.

Today, this landscape boasts forest growth in excess of amounts harvested or lost to various causes. The vast majority of plant and animal species monitored are doing well, compared with the rest of the Nation. At the same time, factors such as sprawling development, nonnative insects and diseases, and the loss of forest-industry infrastructure--to name just a few—are threatening the well-being of the region's forests and its citizens. What is at risk? The clean water in community reservoirs, productive soils that may be paved over or built upon, the diversity of plant and animal communities, and the forest-based jobs and products that are important to the economy and our way of life.

The Northeastern Area is actively working across this landscape, from rural communities to urban neighborhoods. Federal programs and funding, wisely invested, encourage and assist forest landowners and citizens in managing and using forests well today while sustaining them for the future. We pursue our work in cooperation with State forestry organizations and many partners, who contribute their expertise and other resources to our shared objectives. Technical assistance, solid scientific information, and expert analyses are the foundation of the services we provide to our customers and partners. Competitive grants are invested with the prospect of positive net benefits for the public good. Federal financial contributions are typically matched on at least a one-to-one basis.

Many successful, cooperative efforts to protect and restore forests stretch across the Northeast and Midwest, often resulting from work occurring over a number of years. Here are a couple of examples:

- The Chicago Wilderness, started with a Forest Service grant, spawned a partnership of government, private, and corporate entities that has protected 225,000 acres of forests and grasslands in the Chicago area.
- Continuing efforts to restore the Chesapeake Bay began with a focus on the bay's declining water quality Today that focus has broadened to include the watershed. The Forest Service joined with others to build the understanding that forests in the watershed make important contributions to the quality of water in the bay.

The following table summarizes the Northeastern Area's accomplishments, for fiscal year 2006. The table includes information on the scope and scale of the challenges ahead in forest sustainability and use and environmental health in communities across the Northeast and Midwest. We invite you to read the full report, the Year in Forestry, for fiscal year 2006, for additional details and descriptions of work accomplished.

Northeastern Area State and Private Forestry
Accomplishments Summary for Fiscal Year 2006

Program	Challenges and opportunities	What we accomplished in 20 Northeastern and Midwestern States and District of Columbia	What was invested (*millions*) ***	Sample Results and Benefits
Urban and Community Forestry	• 9,066 communities potentially eligible * • 95.2 million people live in cities and towns	• Assisted nearly 40% of eligible communities in hiring/training arborists, completing inventories and management plans, implementing tree protection laws and policies. • Benefited more than 72.5 million residents (76% of the total) by our service	$10.5 in FY 2006 $10.9 in FY 2005 $14.3 in FY 2004	• Citizens involved through 525,147 hours of volunteer time • Urban trees reduced storm water treatment cost by an estimated $380 million in Detroit
Fire Management (Cooperative and National Fire Plan)	• 11,323 communities potentially eligible ** • 15,138 Volunteer Fire Departments	• Served 7,412 (65%) eligible communities: Community Wildfire Protection Plans, fuels reduction, preparedness, and capacity enhancement • Served 3,093 (20%) Volunteer Fire Departments: training, equipment	• $20.1 in FY 2006 • $18.1 in FY 2005 • $21.5 in FY 2004	• 30,574 State and local firefighters trained • Volunteer fire departments saved citizens $1.2 billion annually, in salary offset, structures saved, and lower insurance premiums
Forest Health Management	• 234 million acres to protect • Key invasive pests: Asian longhorned beetle Emerald ash borer Hemlock woolly adelgid Gypsy moth	• Completed pest surveys and maps for 234 million acres • Recommended and carried out biological controls, new technologies, and other treatments on 623,352 acres. Implemented controls for pests including gypsy moth, oak wilt, and hemlock woolly adelgid	• $26.8 in FY 2006 • $25.4 in FY 2005 • $31.7 in FY 2004	• Gypsy moth spread slowed by 70 percent, preventing new infestation on 150 million acres • Asian longhorned beetle eradicated in Chicago
Forest Stewardship	• 4.8 million landowners potentially eligible • 113.5 million acres potentially eligible • Identifying and addressing lands that benefit most from Forest Stewardship	• Assisted 63,346 landowners by field visits, site assessments • Brought 566,177 new acres under sustainable management (10 year total: 7.4 million acres) • Developed 7,469 new Stewardship plans • Most states served identified important forest resource areas	$12.1 in FY 2006 $11.5 in FY 2005 $14.1 in FY 2004	• Landowners who harvested timber did so according to professional advice • Sustainable forestry practices were implemented on more than 200,000 acres • Nine states are now able to track and spatially display accomplishments on highest priority acres
Forest Legacy	• 3.7 million acres of forest developed between 1982 and 1997 • Loss of working forests includes loss of jobs	• Protected 259,182 acres • Protected 990,790 acres since inception of program in 1990	$29.0 in FY 2006 $27.6 in FY 2005 $31.2 in FY 2004	• Critical highest priority forests remain forested • Protecting the Katahdin Forest in Maine avoided mill closures in two towns and protected 650 jobs

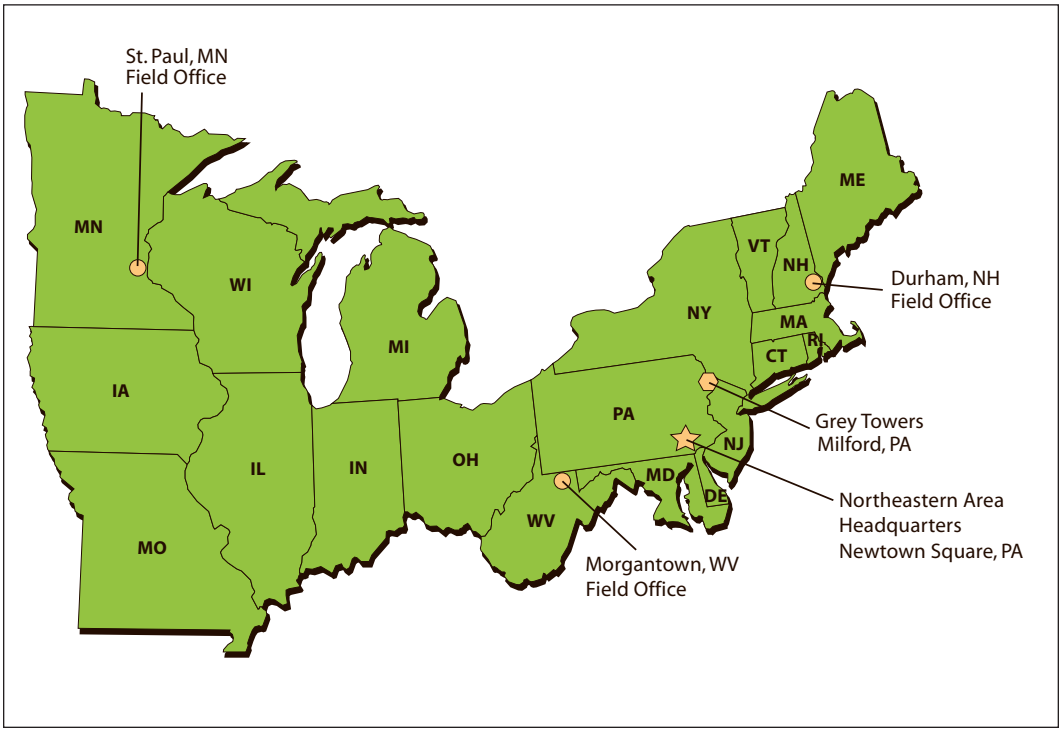
* Communities with more than 1,000 population.

** Includes communities with less than 1,000 population and unincorporated places.

*** Federal Funds are typically matched by other monies or in-kind contributions, one for one.

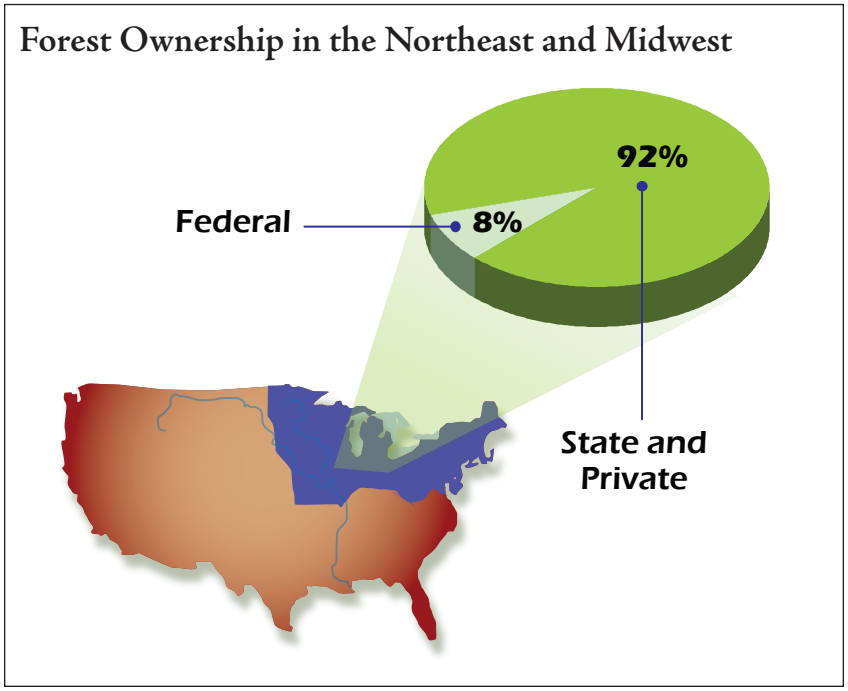
Introduction

The Northeastern Area State and Private Forestry is a major unit of the Forest Service, U.S. Department of Agriculture. The Northeastern Area works in partnership with State forestry agencies and others to promote the wise management, protection, and sustainable use of urban and rural forest resources, primarily on non-Federal lands. Most often, specialists provide services to States, who in turn deliver direct assistance to landowners and communities. Programs are voluntary and nonregulatory, although partners and clients must comply with Federal, State, and local laws.



The Northeastern Area State and Private Forestry, which serves the 20 Northeastern and Midwestern States, is headquartered in Newtown Square, Pennsylvania. It maintains field offices in Durham, New Hampshire; Morgantown, West Virginia; and St. Paul, Minnesota; and manages the Grey Towers National Historic Site in Milford, Pennsylvania.

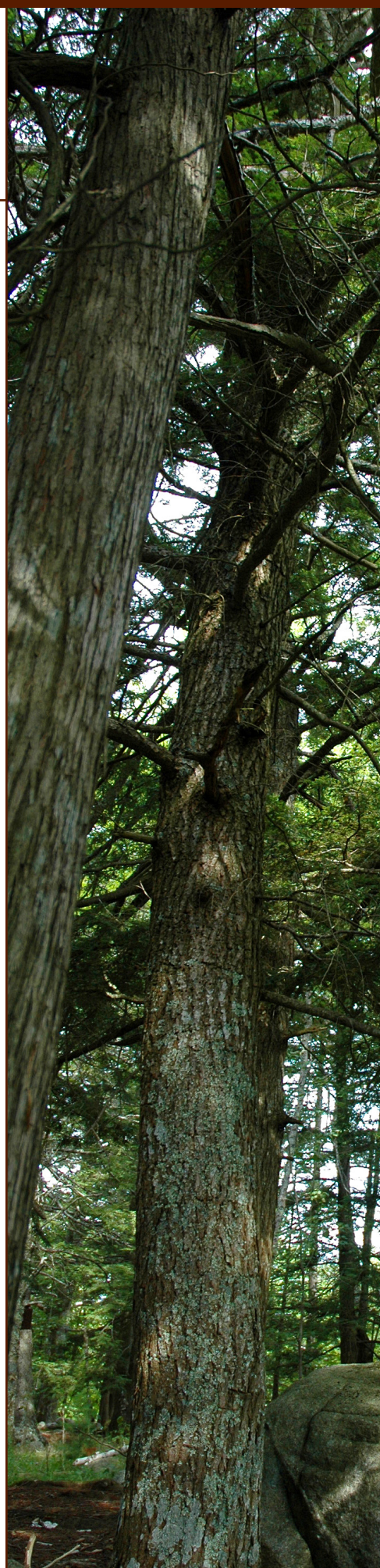
The 20 States in which we work are home to nearly half of the Nation's citizens and many of its major cities. Almost one quarter of the country's forests grow here, and more than 92 percent of them are in state or private ownership. This region is steeped in a long history of forest management and use. Forests cover over 40 percent of the land, and private forests (75 percent of all forest land in the region) provide a wide array of public as well as private benefits. Trees and forests are essential to environmental, social, and economic health. Clean water, fresh air, wildlife, rich soils, and life-giving vegetation are due in large measure to healthy forests and trees.



Twenty three percent of all U.S. forests are in the Northeast and Midwest, and most of these have non-Federal owners.

The Northeastern and Midwestern States are the Nation's leading producers of forest-based products, which vary from construction material to fine hardwoods such as oak and cherry. Forest-related businesses rank in the top 10 in economic importance in 19 of the 20 states. Region-wide, 614,000 workers harvest and process wood products, earning a combined annual payroll of $22.6 billion. Recreation and nontimber products bring in billions more.

In all of the 20 States, private forest owners grapple with similar challenges: conserving productive forest land in the face of population growth and suburban sprawl; assisting forest industries that employ thousands as they struggle to compete against global competition; dealing with threats to forest health; and protecting and enhancing forest values that help to protect drinking water quality, shelter wildlife, and provide recreational opportunities to millions of residents and visitors.



Because the decisions private landowners make ultimately affect everyone, the Forest Service has a vested interest in helping landowners and communities care for their forests. Credible information and targeted financial assistance are valuable tools for helping landowners meet their individual goals as they provide public benefits. The Northeastern Area's technical assistance includes forest management, insect and disease management, conservation education, remote sensing and mapping, sustainability and ecology, wildland fire prevention, forest products, land conservation, and others. In addition to its core programs, the Northeastern Area supports special initiatives such as the Pennsylvania, New Jersey, New York, and Connecticut Highlands Regional Study and the Chesapeake Bay Program. Lessons learned can be applied to similar situations elsewhere.

In fiscal year 2006, the Northeastern Area awarded $86 million in grants for activities as diverse as forest management plans, improving wildlife habitat, planting trees adjacent to streams, and enhancing firefighting capability. Grant recipients "match" Federal funds with money, materials, or time.

This publication presents the 2006 update of the Northeastern Area's programs, activities, and accomplishments. Appendix I shows the dollar investment in State and Private Forestry Programs for the last three fiscal years. Appendix II gives selected facts and accomplishments.

The Changing Forest

Across the Northeast and Midwest, forest cover stands at about 40 percent, compared with 33 percent in the Nation as a whole. In New England, forests dominate the landscape. The Midwest has a substantial amount of land in agriculture interwoven with forests and development. The Mid-Atlantic is subject to intense development pressure and forest conversion.

Many of today's forests differ markedly from those of centuries past. Because many grew from abandoned farmland, the trees are of similar age. Indeed, data show some age imbalances in the region's forests: there are fewer older trees and young trees than "middle-aged" trees. To bring the forest into balance, trees need to be harvested to allow young seedlings room to grow and become the forests of tomorrow. As interest in forest stewardship grows and thousands of acres of exceptional lands are protected from development and destructive logging practices, the age balance will improve.

The amount of annual forest growth generally exceeds the amount harvested or lost to insects and diseases and other causes. From 1997 to 2002, however, forested acres declined slightly, mostly as a result of development, and may signal an end to the gradual increase of forest land. The most common types of forests are maple-beech-birch and oak-hickory. White pine, spruce, fir, and aspen are locally important.

Overall, the region's forests are healthy and productive, but there is cause for concern. Suburban sprawl and rapid development are dividing the landscape into small parcels with limited environmental benefits. Wildlife corridors are cut off and habitat destroyed. Polluted runoff flows from streets and parking lots, while lawn chemicals seep into the ground, and ultimately into our waterways. Dozens of threatened and endangered species, including our national symbol, the bald eagle, are at risk. Some animal and plant species that were once widespread now occupy just a portion of their former range. And sadly, some species are gone forever. Nevertheless, 90 percent of the region's monitored plant and animal species are faring well, compared with 67 percent nationally.

Scientists are waging an all-out battle against nonnative species of plants and animals, referred to as *exotic invasives*. International trade is mostly responsible for delivering these unwelcome invaders to our shores, where they often run rampant without their natural enemies. Several have the potential to decimate trees and forests. Continuous monitoring of forests and ports of entry are the first line of defense; the goal is to intercept invaders before they have a chance to spread.

Despite threats to forest land, there is reason to be optimistic. Public lands grew to 32,547,000 acres in 2002, nearly 12 percent more than in 1953, and totaled 20.5 percent of forest acreage.[1] Most of these lands are dedicated to conservation.

The Northeastern Area has strategic priorities that focus on conserving, restoring, and enhancing forests, as well as addressing challenges to them.

> ***"The conservation of natural resources is the fundamental problem. Unless we solve that problem it will avail us little to solve all others."***
>
> ***Theodore Roosevelt, 1907***

[1] W. Brad Smith. 2002. Forest resources of the United States, 1997. Forest Service, U.S. Department of Agriculture.

Strategic Priorities

The Northeastern Area has a customer-driven strategic plan based on 7 criteria and 67 indicators of sustainability developed in 1995 by representatives of 12 countries, including the United States. The Northeastern Area Association of State Foresters and the Northeastern Area adopted the 7 criteria and chose 18 indicators that fit the Northeast and Midwest.

The Northeastern Area has three major goals:

Promote sustainable forest management

Sustainable forests meet human needs today without "borrowing" from future generations. Long term sustainability depends upon keeping enough productive forest land and protecting important tracts from being subdivided or fragmented until they can no longer sustain ecological functions. Other threats to sustainability include insects and diseases, invasive plants, pollution, and poor management.

Enhance the capacity of forests to provide public benefits

Forests contribute to environmental health and spur economic growth. Community forests and trees reduce heating and cooling costs by at least 10 percent, draw more people to downtown business districts, and intercept air and water pollution. To keep rural lands forested and productive, landowners need a mix of knowledge, technical assistance, reasonable regulations, and the potential for a financial return on their investment.

Provide effective public service

The Northeastern Area and its partners work hard to deliver forestry programs and to develop and maintain effective partnerships with States, communities, landowners, and others. Promoting effective forest policies, providing credible forest information, and delivering technical and financial assistance are key elements of the public service we provide.

The Northeastern Area is also working to improve homeland security and disaster response in cooperation with other Federal and State agencies, securing aircraft and facilities, and training others to use the Incident Command System for a seamless response to emergencies, both natural and human-caused.

Agents of Change—Making a

The Northeastern Area's strategic goals challenge us to make a difference in people's lives and on the land. The projects highlighted here exemplify that spirit.

Strategic Goal: Promote sustainable forest management

Military Readiness Meets Forest Conservation

The Department of Defense (DOD) holds more than 30 million acres of lands, here and around the globe. Recognizing the environmental value of its lands, DOD is working to balance military needs with nature. The Northeastern Area and the U.S. Army Environmental Command signed an Interagency Agreement to enhance military training, mission readiness, and natural resources through forest stewardship. More than 200 Forest Service experts have assisted the military on more than 60 installations.

In 2006, Northeastern Area staff and fire specialists from national forests in Vermont, New York, and New Hampshire used prescribed fire at Fort Drum, New York, the New Boston Air Force Station in New Hampshire, Westover Air Reserve Base in Massachusetts, and at other locations to accomplish seemingly contradictory goals: controlling underbrush that was interfering with infantry training while creating badly needed habitat for migratory songbirds; and increasing the numbers of a State endangered plant and enhancing wildlife habitat while improving aircraft safety.

A small team based at the U.S. Army Environmental Command is also forming partnerships with other Forest Service regions to assist military installations outside the Northeast and Midwest.

Joe English Pond on New Boston Air Force Station, NH. Firefighters take a short break to let flames die down on a prescribed burn before checking the effectiveness of the burn.

Strategic Goal: Provide effective public service

Federal, state and local partners participate in a simulated regional exercise for FEMA Region 2.

Federal Agencies Cooperate on Hurricane Response Exercises

Few will forget Hurricane Katrina and the devastation and human suffering left in her wake. Unfortunately, the storm exposed weaknesses in our Nation's disaster response system at all levels.

U.S. Forest Service specialists are experts on the Incident Command System (ICS) originally designed to coordinate wildfire responses across multiple jurisdictions. With ICS, emergency responders work together using the same structure, terminology, communication channels, and logistics. Uniform adoption of ICS would significantly improve the Nation's response to disasters.

The Northeastern Area has provided ICS training in cooperation with the Federal Emergency Management Agency (FEMA), for some time. In 2006, Forest Service staff collaborated with FEMA and other Federal agencies located within the FEMA coastal regions to test the amended National Response Plan (NRP). More than 100 representatives from Federal, State, and local response agencies, and private sector organizations participated in two full-scale regional exercises.

Difference in 2006

Strategic Goal: Enhance the capacity of forests to provide public benefits

Communities Learn How to "Weather the Storm"

When a natural disaster strikes—a wind or ice storm, for example—downed trees can damage property and sever utility wires, causing a public safety nightmare. Much can be done ahead of time to minimize the negative fallout.

The Northeastern Area has been assisting States and communities with pre-disaster planning and mitigation for more than a decade. A comprehensive guidebook, *Storms over the Urban Forest*, is a regional "best seller." It shows communities how to prepare for natural disasters, create and maintain an urban forest that's less prone to severe damage (plant *small* species of trees near utility wires), respond appropriately when a disaster comes, and help the forest recover as quickly as possible. A 2006 Rhode Island "Storms" workshop attracted more than 60 municipal employees, arborists, tree wardens, and volunteer group leaders from Rhode Island, Connecticut, and Massachusetts.

An October snow storm damaged trees in Buffalo, New York.

Agencies Close to Declaring Chicago Free of Tree-Killing Insect

The Asian longhorned beetle (ALB), discovered in Chicago in 1998, could have killed thousands of trees if allowed to spread. The Forest Service, the USDA Animal and Plant Health Inspection Service (APHIS), the State of Illinois, and the city of Chicago took swift, coordinated action to combat the beetle. Areas around the infestations were immediately quarantined. Agencies located, removed, and destroyed infested trees, enlisting the public's help in the search for other infested sites.

The rapid, coordinated response paid off—quarantines were lifted in spring 2005. If all goes as expected, APHIS will declare the beetle eradicated after 3 beetle-free years.

Public help is vital as the required surveys are completed. Citizens are looking for beetle signs on their own land and on public property. Cooperatively developed public information includes a small ALB identification card punched with a hole the same size as the ALB drills in trees. The Beetle Busters program, now part of the standard Chicago public school curriculum, is teaching thousands of children to survey their neighborhoods for signs of ALB. Extensive media coverage has helped to mobilize public action.

Program Accomplishments

Forest Health Management Program

Background

Forests and trees are equipped to deal with *some* environmental stress, but combinations of factors such as drought, insects, ozone levels, or diseases over a short time span can seriously damage or kill trees. Natural resource specialists regularly monitor forest conditions, intervening when stressors are likely to cause significant environmental or economic damage.

Exotic invasives—harmful insects, diseases, plants, or animals that were introduced by humans, either deliberately or accidentally—are a major threat to America's forests. Without their natural enemies, invaders can spread unchecked, doing serious harm.

Program Description

The ***Forest Health Management Program*** provides expertise, information, and cost-share funding to protect forest health, and to address threats to forest sustainability. The Forest Health Management Program delivers services directly to States, national forests, other Federal land managers, and tribal governments. Five components make up the program:

Participants from several states learned how to peel trees to look for emerald ash borer larvae, at a workshop in Ohio, in September 2006.

- Cooperative Lands Forest Health Management
- Cooperative Lands Pest Prevention and Suppression
- Federal Lands Forest Health Management
- Federal Lands Prevention and Suppression
- Forest Health Monitoring

Program activities focus on the following:

- *Technical Assistance.* Provides forest insect and disease expertise, offering leadership and assistance on critical issues such as exotic invasive species.
- *Technology Development.* Develops useful applications and technological advances to assist landowners and resource mangers with forest health issues.
- *Information Transfer.* Provides information to identify and effectively address forest health issues. Direct contact, guidelines, presentations, and distribution of

Noel Schneeberger and Judy Antipin accepted awards from Chief Dale Bosworth for themselves and other Northeastern Area members of the Chicago Asian Longhorned Beetle Eradication Program at the first ever USDA Forest Service Invasive Species conference. Tom Dilley, Dennis Haugen and Gina Childs also received awards. The event was held in Denver, CO, in June 2006.

field and informational products keep stakeholders advised of threats and best practices.

- Survey and Monitoring. Monitors and assesses forest resource conditions, including early detection of invasives, annual insect and disease monitoring, and long-term forest trend analysis.
- *Prevention, Suppression, and Restoration.* Provides cost-share funds to States and other cooperators for treatments needed to prevent or mitigate unacceptable damage.

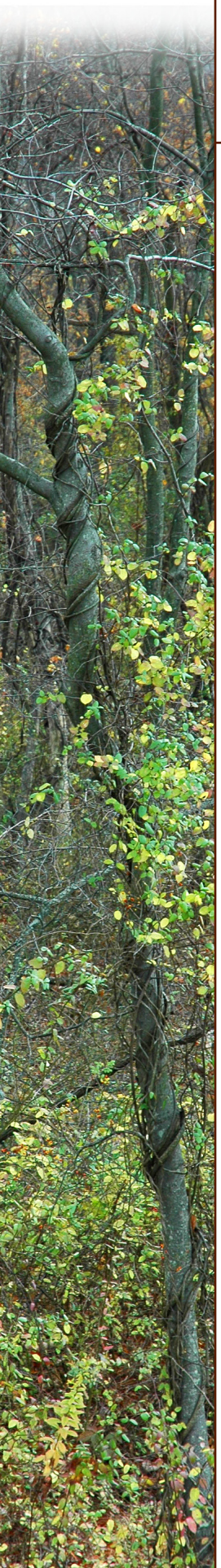
Accomplishments in Forest Health Management

Surveys and Technical Assistance

- Completed surveys on 233.9 million acres to locate and record damage from forest pests. Annual surveys locate forest damage and are a major indicator of suppression or restoration needs.
- Coordinated pest surveys in cooperation with APHIS and State partners, including special emerald ash borer surveys in 14 of the 20 States served by the Northeastern Area. Surveyed 11 States to detect the newest invasive insect, Sirex woodwasp.
- Supported treatments on 623,352 acres for various pests, including gypsy moth, forest tent caterpillar, and oak wilt.
- Coordinated the setup of Early Detection Rapid Response bark beetle surveys in Massachusetts, Maine, Pennsylvania, and West Virginia.
- Provided Dutch elm disease management assistance to several metro areas, including the Twin Cities in Minnesota, and Washington, DC.
- Completed risk maps for 20 major forest pests, offering resource managers an important tool for prioritizing forest pest management needs.
- Coordinated monitoring in New Jersey, Delaware, and Maryland to detect southern pine beetles, an insect that has caused much damage in the Southern States.

Assistance to Customers and Partners

- Sponsored and organized a Firewood Forum near Chicago. More than 80 participants from 14 States and Canada attended the event, which showed how moving firewood can spread invasive insects.
- Provided pesticide training and certification to 40 national forest employees on two national forests, who can now safely apply pesticides to help control invasive plants.
- Provided support and training in digital aerial sketchmapping (DASM) to the States of Connecticut, Rhode Island, and Massachusetts. This technology will assist States in developing a more accurate and timely picture of forest health conditions.



Pest Management

Owing to the region's abundant forests and widespread exposure to global commerce, it hosts many invasive forest pests that are of national concern. Among these are the Asian longhorned beetle, emerald ash borer, Sirex woodwasp, and gypsy moth. Addressing these invaders in cooperation with other Federal and State agencies is a key part of the Forest Health Management Program.

The ***Asian longhorned beetle (ALB)***, a large wood-boring insect from eastern Asia, was introduced to the United States in 2005. Quarantines and eradication programs have been in effect in Chicago, New York, and New Jersey. Accomplishments include the following:

- Provided financial and technical assistance for a tree restoration program in ALB-affected areas of New York and New Jersey.
- Continued financial support in New York to sustain an ALB hotline for the public to easily report potential ALB sightings, and to support a project in cooperation with Trees New York to help APHIS gain access to properties to conduct crucial ALB inspections.
- Produced an ALB identification and management DVD and CD training package with Rutgers Cooperative Research and Extension, for distribution to groups such as extension services, tree care professionals, schools, and the general public.

The ***emerald ash borer (EAB)***, an insect native to eastern Asia, was discovered in the Detroit area in 2002. It has also invaded sites in Ohio, Indiana, and Illinois. A spot infestation traced to a nursery shipment was also discovered in Maryland. EAB has killed more than 20 million trees since its arrival in the United States. Actions against EAB included these:

- Facilitated an effective, coordinated response to EAB by participating in the national management team with APHIS, State Foresters, and State plant pest regulatory officials.

Tom Rawinski (right) and Massachusetts Restoration Ecologist Tim Simmons examine rusty willow (*Salix atrocinerea*) on a Cape Cod pond shore in autumn 2005. This highly invasive European species went undetected for decades.

- Participated in the five-State EAB communications team with APHIS and Ohio, Michigan, Indiana, Illinois, and Maryland, to develop and distribute consistent public education and outreach materials.
- Provided financial assistance and guidance to the national EAB Web site and EAB outreach in affected States (www.emeraldashborer.info). Better public awareness has increased the number of reports about potentially infested sites.
- Provided on-site public outreach and technical assistance to the Illinois Department of Agriculture after EAB was discovered in that State in 2006, allowing State partners to move quickly to determine the extent of the infestation.
- Partnered with Michigan State University and the Forest Service Northern Research Station to develop and evaluate new methods and technology to improve EAB surveys and control measures.
- Conducted EAB surveys on Federal, private, and non-Federal public lands in cooperation with State Foresters and State plant pest regulatory officials.

The ***Sirex woodwasp* (Sirex noctilio)**, native to Europe, Asia, and northern Africa, has inflicted major damage on U.S. pine species around the world. First detected in the United States in upstate New York in 2005, experts believe that all U.S. pine species are at risk. Biological controls have proven effective in several countries. Actions taken against Sirex woodwasp included these:

- Participated in the national Sirex management team with APHIS, State Foresters, and State plant pest regulatory officials, assuring an effective, coordinated response.

- Developed a survey and management plan for Sirex in cooperation with APHIS and New York State authorities. The plan includes strategies for cooperation with Canadian authorities since the pest has also been discovered across the border.
- Used new remote sensing technology to facilitate Sirex surveys in New York State.

The ***gypsy moth***, brought to this country in 1869, was found in all or parts of 19 States, from Maine to Wisconsin and south from Illinois to North Carolina in 2006. Management of this major pest includes aerial treatments to slow its spread and to suppress rapidly increasing populations within the infested zone. More than 850,000 acres of gypsy moth defoliation was detected across the Northeast and Midwest in 2006—a 5-year high. Gypsy moth populations have been increasing over the last 5 years, particularly in the Mid-Atlantic States, where many areas have had outbreaks not seen since the early 1990s. Actions include the following:

- Managed the treatment of 545,000 acres in nine States to slow the insect's spread and 153,300 acres in eight States to suppress outbreaks.
- Provided on-site technical assistance to the Ohio Department of Agriculture gypsy moth suppression and Slow-the-Spread projects, Grey Towers National Historic Site, the Naval Air Station at Lakehurst, New Jersey, and the gypsy moth Slow-the-Spread Project in Indiana and Wisconsin.
- Assisted in the preparation of multiyear environmental assessments and project-specific work and safety plans for gypsy moth suppression projects in West Virginia, Ohio, New Jersey, Maryland, and Pennsylvania.

Other pest-related activities:

- Coordinated with State Foresters, State plant pest regulatory officials, universities, and APHIS on sudden oak death surveys in high risk–high priority areas of all 20 Northeastern and Midwestern States.
- Battled the growing invasive plants problem by supporting State plans, encouraging and supporting local treatment cooperatives, and promoting long term biological controls.
- Held the first Northeastern and Midwestern pathologist's workshop to set work activities to ensure adequate responses to forest diseases.
- Received an award on behalf of Northeastern Area personnel who worked on the Chicago Asian Longhorned Beetle Eradication Program.
- Trained Federal and Nature Conservancy cooperators to manage hemlock woolly adelgid (HWA) using imidacloprid stem and soil treatments.
- Updated the HWA Web site, provided leadership for the HWA Coordinating Committee, and coordinated HWA Initiative activities among the USDA Forest Service's Northeastern Area, Northern Research Station, and Southern Region.
- Coordinated the rearing, release, and evaluation of new HWA predators to provide biocontrol tools for a long-term solution to this invasive pest.

Tom Dilley of the Northeastern Area staff discusses emerald ash borer with attendees at the Municipal Arborists Association annual meeting in Asheville, NC.

Cooperative Fire Protection Program

The region's volunteer fire departments respond to more than 700,000 wildfires in a typical year, saving taxpayers a total of $1.2 billion annually.

Background

The year 2006 set a record for U.S. wildfires, drawing upon every wildland firefighting resource in the country. More than 3,000 homes and other structures were destroyed amid fires that consumed in excess of 9 million acres. All told, firefighters battled more than 89,000 blazes at a cost of nearly $1.5 billion. Between August and October, the Northeastern and Midwestern States dispatched 34 fire suppression crews and hundreds of fire management personnel to the West, Southwest, Texas, and Oklahoma.

The Northeast and Midwest had the most wildfire activity between March and June. Nearly 14,000 reported wildfires in Minnesota, Wisconsin, Michigan, Missouri, Indiana, Maryland, Pennsylvania, and parts of New England collectively burned more than 142,000 acres. Nearly 100 homes and structures were lost.

As sobering as these numbers are, they do not paint the entire picture for the region or the Nation. Small, local fire agencies suppress many wildland fires and never report them to any national database.

Since 92 percent of the land in the Northeast and Midwest is in non-Federal ownership, the region depends largely on volunteer fire departments to control wildfires and protect communities. The States and the Northeastern Area aid local departments, whose dedication protects lives, property, and natural resources while saving taxpayers an estimated $370 million in suppression costs alone every year.

West Virginia Division of Forestry in conjunction with the Fire Department at the Martinsburg Air National Guard utilized Volunteer Fire Assistance funds to train and equip firefighters with personal protective equipment, making them available to support wildfire suppression in West Virginia or nationally.

Program Description

The ***Cooperative Fire Protection Program*** stresses prevention, and when wildfires strike, a strong initial attack to keep fires small. The program has several parts:

State Fire Assistance offers grants and technical assistance to States and local fire organizations to:

- Boost wildland firefighting capacity,
- Reduce fire hazards by actions such as removing excess fuels,
- Target programs to hazardous areas, and
- Acquire small equipment.

Volunteer Fire Assistance provides cost-share grants to communities with fewer than 10,000 people. Funds help these fire departments to:

Following a Presidential directive under the National Incident Management System (NIMS), the Northeastern Area set a goal for the year 2020: all of the region's State and local fire agencies will be able to interact, coordinate, and communicate with all emergency response agencies.

- Acquire fire and safety equipment,
- Train volunteer firefighters, and
- Organize new departments in unprotected communities.

Federal Excess Personal Property and *Fire Fighter Equipment Programs*. Each year, the Northeastern Area obtains millions of dollars of excess equipment and loans it to State forestry agencies and partners, including rural fire departments. In 2005, Congress and the President authorized the Forest Service to award ownership and title of firefighting equipment to States or local departments.

Aviation Management supports fire programs that use fixed-wing aircraft and helicopters. The program provides safety inspection and oversight for projects using Federal Excess Property aircraft and manages aviation missions involving forest damage assessments, aerial photography, and pesticide applications.

The Cooperative Fire Protection Program also helps support several multistate/Canadian Province fire protection *compacts*. These compacts have "mutual aid" agreements to help each other with equipment and personnel in the event of a catastrophic wildfire.

Congress first funded the *National Fire Plan* in fiscal year 2001 to provide additional resources for reducing hazardous fuels, controlling wildfires, restoring burned landscapes, and assisting communities.

The Northeastern Area has an interagency agreement with the *U.S. Army Environmental Center* to help military services provide training, enhance mission readiness, and improve natural resources through forest stewardship. Military lands are managed to provide realistic training and to conserve ecosystems.

The Minnesota State Forester placed over 50 brush trucks similar to this one in local fire departments with little cost to the fire departments, through the Federal Excess Personal Property Program.

Accomplishments in Cooperative Fire Protection

Due to a dry spring across much of the Northeast and Midwest, the number of wildfires increased by nearly 3,000, burning 68,000 more acres than in 2005. In Maryland, a fast-moving wildfire just miles from the Nation's Capital caused more than half a million dollars in damage to several condominiums. Minimizing such losses requires a quick response, an effective initial attack, and community programs aimed at reducing fire hazards.

Fires and acres	FY 2005	FY 2006	10-Year Average
Number of fires	11,207	13,951	11,313
Acres burned	73,899	142,118	102,416

In 2006, the State Fire Assistance Program supported wildland fire suppression and Incident Management training for 30,574 State and local firefighters. It also provided support to States for prescribed fire treatments to reduce excessive flammable material in forests, most in the "wildland-urban interface" near communities.

Volunteer Fire Assistance Program

The Northeastern Area, cooperating with State forestry agencies, accomplished the following:

- Awarded grants totaling $3.7 million to 2,089 departments.
- Trained 12,620 volunteers in Incident Management and wildland fire suppression.
- Assisted in the formation of six new fire departments.
- Assisted a total of 6,703 fire departments.

Federal Excess Personal Property Program

More than $150 million in firefighting equipment, primarily trucks and some aircraft, is currently on loan from the Federal government to State and local firefighting agencies. In 2006, another $12 million in equipment was loaned to agencies. Under the new *Fire Fighter Equipment Program*, the Northeastern Area transferred ownership of nearly $4 million in equipment to those States or local agencies that wanted to hold title.

Aviation Management

In 2006, one aviation accident was reported, caused by pilot error. Fortunately, there were no fatalities or equipment failures. All contract and State aircraft were inspected, and aviation equipment standards were improved.

U.S. Army Environmental Center

The name of this facility was changed to the *U.S. Army Environmental Command (USAEC)* to reflect Department of Defense intentions to improve environmental conditions on all military installations.

The Northeastern Area provides a five-person Military Liaison Working Group to oversee and administer agreements and projects. Stationed around the country, the group also provides forestry, fire, and natural resource advice to military headquarters and to more than 70 installations. In 2006, the group accomplished the following:

- Developed prescribed fire plans and conducted prescribed burns and fuel reduction projects at military installations in New Hampshire, New York, Massachusetts, Colorado, and Florida.
- Provided environmental design criteria for a Fort Hood, Texas, training range, saving $2 million.
- Supported the Marine Corps' Camp Butler in Okinawa, Japan, establishing fire-resistant vegetation on firing ranges to reduce the danger to nearby communities.
- Developed best management practices for road and construction projects.

Forest Fire Compacts

The region's compacts include the Big Rivers, the Great Lakes, the Mid-Atlantic, and the Northeastern Forest Fire Protection Commission. Compacts trained more than 2,000 firefighters at two academies, and completed simulation training for Incident Management Teams. Relationships with the Canadian Provinces of New Brunswick, Manitoba, Quebec, and Ontario remain strong as members on both sides of the border actively participate and share in controlling wildfires.

National Fire Plan

States and cooperators used National Fire Plan funds to enhance wildland firefighting preparedness and to reduce wildfire hazards around communities. Funds were used to:

- Treat 35,351 acres of hazardous fuels with prescribed fire,
- Reduce hazardous fuels on 590 acres via mechanical treatments,
- Complete community protections plans benefiting 1,209 communities, and
- Deliver 3,065 prevention and community education programs.

An additional 2,762 communities benefited from a variety of programs, including special training, enhancements to rural water supplies for fire suppression, and economic action projects.

Fuelwood from the Traprock hazard reduction project awaits transport to the mill.

Landowner Assistance Programs

Background

The collective decisions of nearly 5 million private forest landowners directly influence our environment and our lives. Private ownership in the region stands at 75 percent, versus about 57 percent for the Nation as a whole. Two-thirds of the 170 million acres of forest is in private nonindustrial ownership.

In addition to recreation, wood products, and wildlife habitat, forests offer some not-so-obvious benefits: they protect drinking water quality, add oxygen to the atmosphere, and store carbon that contributes to global climate change. While some of these benefits could be provided from other sources at great economic cost, others are irreplaceable.

Many factors are placing forest values at risk: sprawling development, poor farming or logging practices, wildfires, invasive plants and animals, neglect, even well-intentioned but misguided land management. The public stake in healthy forests is strong.

Program Description

Landowner Assistance Programs promote sound forestry on private lands. The *Forest Stewardship Program* helps forest owners manage their property for multiple benefits. Professional foresters assist landowners in developing a written Forest Stewardship Plan and management objectives, recommending actions for achieving them. The benefits are substantial—studies show that forest owners who have Forest Stewardship Plans leave twice the number of trees for the future, do a better job of enhancing wildlife habitat, and double their timber sale income when compared to owners who do not have plans.

Created under the 2002 Farm Bill, the *Forest Land Enhancement Program (FLEP)* offers educational, technical, and financial assistance to landowners for sustainable forest management. States develop a State Priority Plan and share up to 75 percent of the cost of management activities, such as thinning or wildlife habitat improvement. Landowner interest in the program remains high.

Accomplishments in Landowner Assistance Programs

Landowner Assistance Program staff, in cooperation with States and other partners, are involved in many activities to maintain, care for, and protect the region's precious forest resources.

Spatial Analysis Project. Until recently, private landowners received Forest Stewardship Program assistance on a first-come, first-served basis. While this approach benefited many individual landowners and their forests, program managers could not target limited resources to key forest landscapes and resources, nor easily assess the overall results.

Now in its fifth year, the GIS-based Spatial Analysis Project (SAP) allows State forestry agencies to identify and map important forest lands, including tracts that have Forest Stewardship Plans, so they can target resources to areas where conservation activities are likely to make the most difference. The project has two components: an assessment phase and a mapping phase. To date, 10 States have completed assessments and mapping projects. All 20 States served by the Northeastern Area will complete their statewide assessments by the end of 2006 and their final reports by spring 2007.

In the first regional application of SAP, the Upper Mississippi River Watershed Forestry Partnership is evaluating forest conditions in the Upper Mississippi River watershed. It has identified areas in greatest need of forest restoration along waterways, priority areas for establishing new forests to reduce erosion and protect water quality, and is identifying potential areas for bird conservation.

SAP can be used in many ways. Iowa informed lawmakers about resources needed to implement Forest Stewardship Plans. SAP results convinced several USDA Natural Resources Conservation Service county offices in Iowa to target Environmental Quality Incentives Program dollars to forest management and reforestation on private land. States have also used SAP information to report FLEP accomplishments, to determine which projects were completed in important (high-potential) forest resource areas, and for workforce planning—to balance their workload, align their workforce with natural resources needs, and decide on effective program delivery strategies.

The SAP has helped to change delivery of the national Forest Stewardship Program. It is the foundation for the program's fiscal year 2007 performance measures and the cornerstone for the revised *Forest Stewardship Program National Standards and Guidelines*.

Web-Based Data Entry Tool (WebDET). An outgrowth of the Spatial Analysis Project, WebDET is a national Web-based data entry and report writing application. A joint effort of the Northeastern Area and the Colorado State Forest Service, it will allow field foresters to create electronic maps and Forest Stewardship Plans, maintain a standardized database, and report accomplishments once via the Internet, without the need for desktop GIS software or software expertise.

National information resource specialists are managing the WebDET project with the close cooperation of Northeastern Area specialists and national program managers to ensure functionality and performance.

During fiscal year 2006, the U.S. Forest Service's Albuquerque Service Center tested and refined its function, performance, and security. When facilities are ready, WebDET will be moved to the National Information Technology Center (NITC), where its external networks will be tested and final security measures implemented. WebDET will be one of the first applications under the new Forest Service framework at NITC.

Making a Difference on the Land

- Tree planting and other actions were completed on more than 74,000 acres, to provide clean water, clean air, wildlife habitat, timber, and other values.

Resource specialists completed new Forest Stewardship Plans on 566,177 acres, bringing the 10-year total to 7.4 million acres under written plans.

- Management activities enhanced more than 36,000 acres of wildlife habitat. Landowners created food plots, saved den trees, controlled deer damage, established shrubs to attract birds and other animals, and improved biodiversity.
- Landowners improved 78,000 acres of forests for timber production and completed harvests (following a professional prescription) on more than 132,000 acres.
- Private consultants handled more than 10,000 referrals to oversee timber sales, generating about $15 million in income.
- The Northeastern Area provided tax and estate planning information to more than 80 tax preparers, landowners, and professional foresters, saving landowners an average of $1,000 to $2,500 on their tax bills. As tax preparers and forestry consultants work with new and existing clients, total tax savings will continue to grow.

Forest Land Enhancement Program. Studies have shown that cost-share funds are an important motivator for some private landowners who otherwise would not accomplish their objectives. In fiscal year 2006, they responded strongly to the availability of FLEP cost-share funds, receiving payments of more than $1.9 million for completed work. Projects included creating forest management plans on more than 34,000 acres and completing 11,000 acres of forest stand improvement.

Publications. The Northeastern Area released the *Northeastern Forest Regeneration Handbook: A Guide for Forest Owners, Harvesting Practitioners, and Public Officials* (NA–TP–03–06). Topics include the history and status of northeastern forests, how environmental factors and disturbances affect tree growth and regeneration, and how to regenerate different types of forests and tree species. The handbook also includes contact information for each of the Northeastern States and a list of additional resources for readers wishing to pursue particular topics. The handbook is available at www.na.fs.fed.us/stewardship/pubs/forest_regn_hanbk06.pdf.

Watershed Forestry

Background

Americans drink more than 1 billion gallons of tap water every day. The average household uses more than 46 gallons per person per day.[1] For the region's 70 million people, the amount and quality of their water is directly tied to forests.

Despite our dependence on clean water, many watersheds and streams are in poor condition because of past land use, while others are threatened by land clearing, development, and faulty agricultural or forestry practices. In some fast-growing locales, more than 100 acres of forest are developed or converted to lawns every day.

Healthy forests capture, store, and slowly release precipitation, trapping and transforming chemicals and nutrients deposited by rain or runoff. When forests are developed or become fragmented, healthy watershed functions may be disrupted.

Landowners and communities make decisions that either sustain or undermine watershed health, often without understanding the environmental and financial consequences. For example, communities may need to build expensive water treatment plants to replace ecosystem functions that nature once provided for free.

[1] U.S. Environmental Protection Agency. 2004. Safe Drinking Water Act 30th anniversary water facts.

NYC Watershed forester Tom Pavlesich (right) talks with teachers about options for managing northern hardwood forests.

Description

Watershed Forestry builds partnerships to engage landowners and communities in protecting and sustaining clean, abundant water and related resources. The staff works with State and Federal agencies, communities, and nonprofit groups, seeking and applying innovative ways to use trees and forests to protect water and avoid costly restoration. Strategies include demonstration projects, grants and incentives, education and training, new technology, and coordination across watershed or political boundaries.

Accomplishments in Watershed Forestry

New Watershed Tools and Technology

- Developed a new best management practices monitoring system to protect water quality during timber harvests. Products will include a field guide, management information system, and data collection and management software. More than 200 foresters from five States have completed training.
- Completed the *Urban Watershed Forestry Manual* with the Center for Watershed Protection. The three-part series explains how to include trees and forests in land use planning, stormwater management, and urban revitalization. Training kicked off with sessions in Maryland and Indiana. More than 8,000 manuals have been downloaded by users in all 50 States and 13 countries.

Volunteers collected tree seeds at the Chesapeake Bay region's *Growing Native* event.

Urban Watershed Health

- Used stormwater mitigation funds in Baltimore to transform 4 acres of schoolyard asphalt to trees and green space. Besides conservation benefits, projects create healthier surroundings for children and teachers. Partners include the U.S. Forest Service Northern Research Station and the Parks and People Foundation.
- Began urban tree enhancement projects in 11 Maryland, Virginia, and Pennsylvania cities. Officials set goals to expand tree cover to improve air and water quality, and public health.
- Launched the *Community Greening Grants Program*, providing $300,000 to seven cities for urban tree planting and "green" storm water management. Key partners included the Chesapeake Bay Trust and the State of Maryland.

Drinking Water Protection

- Completed a 20-State assessment of the "forest to faucet" connection. The report, to be completed in 2007, will illustrate current and future conditions, priority conservation and stewardship areas, and future threats.
- Developed the *Watershed Forest Management (WFM) Guide* for water supply managers, showing how forests protect water supplies, how changes affect forests, and how forest management enhances forest health.
- Designed and tested a Watershed Forest Management Information System for water suppliers, who can use the software to plan timber harvests and manage roads to protect drinking water quality.

Stream and Forest Restoration

- Planted trees along 729 miles of streams and shorelines, keeping more than 300,000 pounds of nitrogen and 4,000 tons of sediment out of waterways. Planted 5,336 miles of riparian forest in Pennsylvania, Maryland, and Virginia since 1996.
- Worked with the Chesapeake Bay Foundation, assisting 176 farmers with buffer restoration in Pennsylvania's Lower Susquehanna River watershed, a region in critical need of pollution control. Provided financial assistance to the foundation to increase landowner assistance, leading to the restoration of more than 81 miles of riparian forest buffer.

Building Awareness

- More than 3,000 *Growing Native* volunteers collected 18,000 pounds of native hardwood seeds for State nurseries to grow for watershed plantings, bringing the 5-year total to 71,000 pounds. In addition to conservation benefits, more than 25,000 residents have a better appreciation for how trees contribute to a healthy bay (www.growingnative.org).
- Hosted *Plant a Seed*, bringing more than 200 sixth-graders from urban schools to the George Washington National Forest to study streams, forest management, and restoration, and how urbanization and poor agricultural practices affect watersheds.

Watershed-Scale Collaboration

The staff coordinated or led watershed-wide projects in 13 States. Partners added more than $5 million in matching contributions. Highlights include the following:

Chesapeake Bay Program

- Completed the first comprehensive *State of Chesapeake Forests* report in partnership with the Conservation Fund. It features a 10-year look at forest conditions, trends, and threats, and describes future conservation strategies.
- Worked with the Chesapeake Executive Council, which signed an agreement calling for better protection of watershed forests by setting measurable forest conservation goals and reducing forest losses.
- In partnership with the National Fish and Wildlife Foundation, provided 15 forest conservation grants totaling $368,000 to nonprofit partners. Grants leveraged $2.5 million in additional contributions.

Checking the Vital Signs of a Watershed:

How much of the land is forested?

Are critical landscapes forested: stream corridors and wetlands, steep slopes, erodible soils, and areas where rainfall can replenish groundwater?

How healthy is the forest overall?

Are there large blocks of forest or are forested tracts small and fragmented?

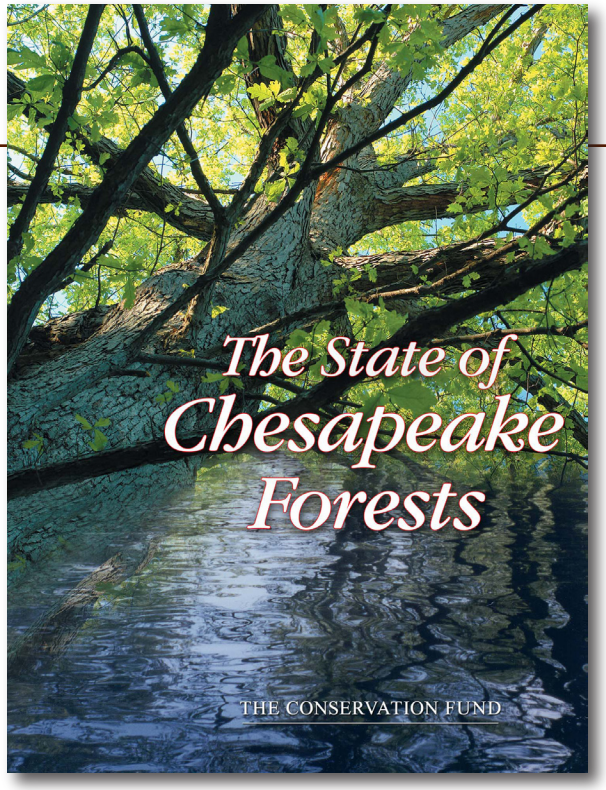
- Brought 28 foresters from the headwaters of the watershed to Smith Island, Maryland, for 3 days of advanced training on the ecology of the Chesapeake Bay.
- Held nine landowner meetings in the Cacapon and Lost River watersheds, gaining 2,860 acres of conservation easements and options to purchase easements on an additional 2,100 acres.

Potomac Watershed Partnership

- Produced a 5-year retrospective report (2000–2005), *The Potomac Watershed Partnership: Charting a Course for Restoring the Nation's River*, highlighting accomplishments since the partnership was formed.
- Completed prescribed burns on 6,000 acres, assisted 120 communities with wildfire safety, and completed more than 100 Forest Stewardship Plans in high-priority portions of the watershed.
- Discussed forest stewardship with 113 Shenandoah Valley landowners; topics included stream bank restoration and fencing, and planting riparian buffers.
- Conserved two Shenandoah Valley properties totaling 321 acres, including a historic Century Farm owned by the same family for more than 100 years.

New York City Watershed

- Completed Watershed Stewardship Plans for 100 private landowners, covering more than 15,000 acres of forest lands.
- Funded 25 best management practice demonstration projects, including timber bridges and erosion control for forest roads. Increased new riparian forest buffers to 3,700 acres by working with agricultural landowners.
- Supported the Watershed Forestry Institute, training 140 teachers in forestry and water quality, including teachers from 10 New York City schools. Green Connections is a partnership with the Catskill Center for Conservation and Development and the city of New York.
- Hosted more than 600 students from 37 New York City schools, who visited the watershed to learn firsthand about forest management and their water supply.

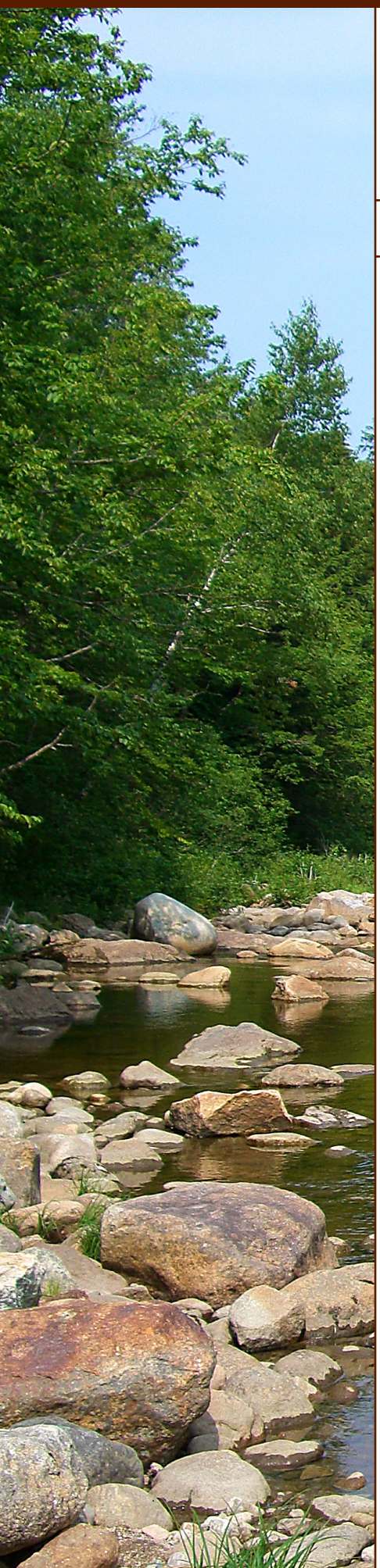


Upper Mississippi River Watershed

- Completed a GIS-based assessment of the seven-State, 189,000 square-mile Upper Mississippi River watershed, locating priority sites for conserving migratory bird habitat, restoring hardwoods, and retaining forest lands. Results will help to quantify restoration needs and target future investments.
- Partnered with the National Fish and Wildlife Foundation to create the *Upper Mississippi River Watershed Fund*. Awarded five grants totaling nearly $200,000, to restore floodplains and oak savannahs, and to rehabilitate streams.
- Completed 10 migratory bird habitat projects, improving 2,712 acres of habitat and reaching more than 2,000 people.

The Highlands of New York, New Jersey, Pennsylvania, and Connecticut

- Developed a regional Land Acquisition Prioritization System to evaluate and rank the water resource value of land conservation projects submitted for funding under the Federal Highlands Conservation Act of 2004.
- Completed an assessment and maps showing the conservation value of 2 million acres of land in the Connecticut and Pennsylvania Highlands.



Forest Legacy Program

Background

Most of today's forests grew naturally from abandoned farmlands and denuded tracts. Forests returned over generations, according to how individual landowners used their land, creating a patchwork of land uses across the landscape. Unbroken tracts of forest offer greater ecological value than do small, fragmented tracts. Unbroken tracts shelter wildlife species that need remote sites or large areas to roam, support forest-related industries and outdoor recreation, and protect water quality.

Today, fragmentation and forest conversion threaten to undermine forest values. The pressure of a growing population is strong—in the Northeast and Midwest, nearly half of the Nation's population lives on slightly less than 20 percent of its land. Where development pressure is high, rising land values boost the cost of holding and managing land. The economic incentives for selling land are strong. Programs and policies that encourage landowners to keep their land forested and well-managed, and those that protect important forest lands from development, benefit all of society.

Program Description

The ***Forest Legacy Program (FLP)*** is a partnership between participating States and the U.S. Forest Service. Working in partnership with State and local governments, nonprofit groups, and willing landowners, the program focuses on forests threatened by development, protecting important parcels where environmental, economic, and social values can be protected long term.

Once States elect to join the program, they complete an Assessment of Need (AON), documenting their need for the program and creating Forest Legacy Areas—regions that have exceptional forests threatened by development. Federal, State, or local governments negotiate with willing landowners, buying the right to permanently restrict development on their land. The Federal government may fund up to 75 percent of program costs, with at least 25 percent coming from private, State, or local sources.

Most tracts are protected by conservation easements, a form of ownership where landowners sell their right to develop the land, but continue to own, use, and pay taxes on its remaining value. Landowners develop and follow a Forest Stewardship Plan to ensure sustainable management. In some cases, owners prefer to sell their land outright; such lands usually come under State or nonprofit ownership.

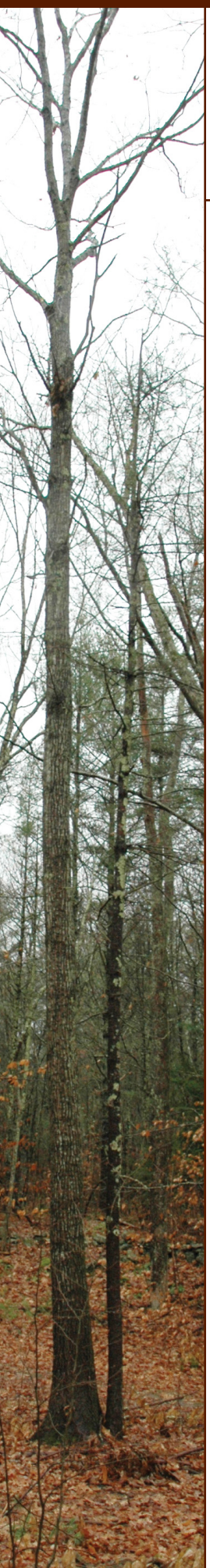
The overall conservation goal of the Machias River Project is to protect the ecological, wildlife habitat, and recreational values of one of the most pristine, remote and valuable riverine wetland ecosystems in the eastern United States.

Accomplishments in Forest Legacy

A total of nearly 1 million acres of productive forest land have been conserved under the Forest Legacy Program, remaining in private ownership and available for sustainable uses. In fiscal year 2006, conservation easements or fee acquisitions were completed on 30 tracts in 12 States at a Federal cost of $26.3 million (table), well below the required 75 percent maximum for the Federal share of total project costs. The following list includes highlights of acquisitions for the year.

State Acquisitions

- Connecticut acquired conservation easements on six tracts to protect the forests and watershed of Stonehouse Brook.
- Illinois acquired a conservation easement in the Rock River Forest Legacy Area near the town of Byron. The 77-acre tract overlooks the Rock River.
- Iowa protected its largest tract yet with a conservation easement on the 417-acre Canyons tract. Situated in eastern Iowa, the tract's limestone bluffs and canyons are home to cave formations rare to Iowa, providing valuable plant and wildlife habitats.
- Maine completed the second phase of the Machias River Project and received the *Wings Across the Americas Award* to recognize the important habitat protected by the project. A fee acquisition on 7,662 acres around the headwater lakes and streams of the Machias River helps to ensure that the river remains a prime site for recreation and wildlife.
- Massachusetts completed a 665-acre conservation easement around the Camp Hi Rock YMCA camp, which will remain forested for campers, wildlife, and watershed protection.
- Michigan completed its first acquisitions, protecting four tracts totaling 360 acres. The properties, all in-holdings to existing State forests, open new recreational opportunities and provide public access to parts of the State forests that were previously difficult to reach.
- Minnesota acquired two conservation easements totaling 4,771 acres in the Brainerd Lakes area of the State. Both properties, which are adjacent to State forests, will continue to be managed for timber products and to allow snowmobiling on designated corridors.
- New Hampshire protected 2,189 acres with a conservation easement on the Moose Mountain property. Located in one of New Hampshire's fastest growing regions, the property will continue to provide wildlife habitat, recreational, and scenic resources.
- New Jersey used a fee acquisition on high-quality watershed lands to create the 433-acre Buckhorn Creek Wildlife Management Area.
- New York acquired a 26-acre fee acquisition to be used as a trail corridor as well as a 1,287-acre forested conservation easement on lands located on the Taconic Ridge, an important geological feature to New York, Connecticut, Massachusetts, and Vermont.
- Rhode Island completed a conservation easement on 68 acres along the shore of Yawgoo Pond in the southern part of the State. Yawgoo Pond's alkaline water can easily be affected by runoff saturated with fertilizers and pesticides. Forests help filter the runoff.
- Vermont protected the first parcel in a multi-tract project called the Chittenden County Uplands. This 1,730-acre first step is part of a larger effort to protect forest land between Camel's Hump State Park and Mount Mansfield State Forest.



Forest Legacy Acquisitions for Fiscal Year 2006

State	Area protected (acres)	Value of interests	Federal payment
Connecticut	497	$921,714	$723,714
Illinois	77	1,640,000	1,133,250
Iowa	417	222,844	178,275
Maine	202,413	31,365,000	5,915,000
Massachusetts	1,133	5,600,000	2,782,700
Michigan	360	661,000	480,750
Minnesota	4,771	3,600,000	2,700,000
New Hampshire	2,189	1,200,000	988,000
New Jersey	961	9,373,950	2,684,750
New York	42,599	9,679,000	5,212,000
Rhode Island	232	1,423,000	852,000
Vermont	3,746	3,717,120	2,616,620
Total	**259,395**	**$69,403,628**	**$26,267,059**

Urban and Community Forestry Program

Background

Urban growth and suburban sprawl, coupled with neglect of community trees, is jeopardizing ecological functions essential to society. The benefits associated with community trees reach beyond the environmental realm: from small towns to busy cities, studies show that healthy trees not only improve the environment, but boost public health, economic development, and the overall quality of life, particularly in distressed communities. Once paved, forests—and their values—are gone forever.

Program Description

The ***Urban and Community Forestry Program*** has these goals: to support and encourage citizens who want to create and maintain a natural environment that enhances their economic, social, and environmental well being; to encourage the use of "smart growth" practices to minimize the loss of valuable trees and forests; and to implement monitoring and management practices that contribute to urban forest health.

In fiscal year 2006, State forestry agencies reported that 72.5 million residents—more than 76 percent of the region's urban and suburban population—benefited from the program's technical, financial, and educational services. More than 3,500 communities received assistance to do the following:

- Establish and maintain local tree care programs, including hiring and training arborists,
- Complete inventories and management plans,
- Implement tree protection laws and policies, and
- Support civic organizations and nonprofit groups.

Volunteers donated more than 525,000 hours to enhance and improve their community's natural resources.

Planting trees in communities brings people together, contributing to social cohesion and community safety and security.

Accomplishments in Urban and Community Forestry

The Economic Value of Urban Forests

How much are urban trees worth? The Northeastern Area is introducing communities to a new Forest Service software package called "i-Tree." The program calculates the benefits and costs of trees using local cost and climate data. The software, which includes many additional features, is available on-line at www.itreetools.org.

Queens Borough, New York, joined Minneapolis and Indianapolis in a software pilot test designed to calculate the annual economic value and cost of small, medium, and large trees in the northeastern climate zone. Results show that, on average, the environmental value of an urban tree is nearly three times greater than its cost. Energy savings and increases in property

Trees are critical components of a urban infrastructure: slowing storm water, attracting pedestrians and shoppers, cooling the environment and improving air quality.

value produced the highest values. Ranking next were reductions in stormwater runoff, air pollution, and carbon dioxide in the air.

Net Annual Benefits of Trees after 20 Years, Northeastern Climate Zone	
Small tree	$19.01
Medium tree	$60.93
Large tree	$131.11
Conifer tree	$41.06

What does the loss of green space cost society? A Detroit metropolitan area study, completed in cooperation with American Forests, Inc., showed green space lost to urban development between 1991 and 2002 would take $1.12 billion in storm water retention ponds and other systems to replace.

Annual benefits of Detroit's trees, which cover about a third of the land area:

- Provide 191 million cubic feet of stormwater management valued at $382 million.
- Remove 2.1 million pounds of air pollution.
- Store 1.2 million tons of carbon at a rate of 9,334 pounds per year, helping to slow global climate change.

Including the value of urban trees in forest inventories. Because urban trees and forests often grow on lands too small or developed to be included in traditional forest inventories, the vital services that urban trees provide are poorly documented. As part of an urban forest health assessment, the Northeastern Area is leading the effort to integrate urban tree cover data into U.S. Forest Service Forest Inventory and Analysis protocols.

Several pilot projects have been completed and published. Data from 139 field plots in Wisconsin were used to describe the benefits that urban forests provide to the State. Findings included the following:

- Most of the 130 billion urban trees were in good condition.
- Tree species had a structural value of $17 billion.
- Annual energy savings amounted to $24.3 million.
- The value of removing air pollutants equaled $36.3 million.
- Carbon storage capacity equaled 6.1 million tons.
- Emerald ash borer is a threat to 12.5 percent of the urban forest.

Readiness and Recovery

Preparation pays off. When the emerald ash borer, a foreign insect that kills ash trees, reached northeastern Illinois in June 2006, communities were ready. After years of technical and financial assistance from the U.S. Forest Service and the Illinois Department of Natural Resources, Tree City USA communities are prepared for natural disasters and invasive pests. Over the years, 183 Illinois municipalities have created tree ordinances; many have comprehensive data on the species and location of their community trees. Communities with these inventories can often pinpoint the location of ash trees down to the street address. State and Federal investments have more than doubled urban forest management capacity in Illinois since 1991.

New hope for America's elm trees. When Dutch elm disease took hold in the Northeast and Midwest in the 1950s, tens of thousands of trees died. Neighborhoods once graced with elegant, green canopies became barren, treeless landscapes. Scientists who worked hard to develop a disease-resistant elm have been rewarded for their efforts. The Minnesota State Arbor Day Celebration showcased resistant elms and encouraged residents to plant them. The event drew significant media coverage, including National Public Radio's *All Things Considered*.

Strengthening the Connection Between People and Trees

Where can we plant trees? With a new tool developed in collaboration with the U.S. Forest Service Northern Research Station, cities can identify potential tree planting sites and set tree cover goals. The Maryland Forest Service used a model called the "Forest Opportunity Spectrum," to make recommendations to the city of Baltimore. Images of potential planting sites, shown by census block, painted a green mosaic so bright that Mayor Martin O'Malley (now Governor) committed to doubling the city's tree cover, from 20 to 40 percent, during the next 30 years.

Training and outreach. The Northeastern Area's urban and community forestry staff is involved in a number of education and outreach projects.

- Produced a three-part *Urban Watershed Forestry Manual* and a series of training modules to educate users in watershed forestry, planning, design, and best management practices.
- Expanded program outreach to nontraditional audiences. Continuous training on effective communication and valuing diversity is available to States and other partners.
- Created an urban forestry index called "Ufind" (www.urbanforestryindex.net) to improve access to existing information, and to prevent product duplication. The searchable database houses more than 900 records catalogued by subject, format, and geographic area.
- Updated the program's Web page, highlighting the work of regional staff and State partners (www.na.fs.fed.us/urban).

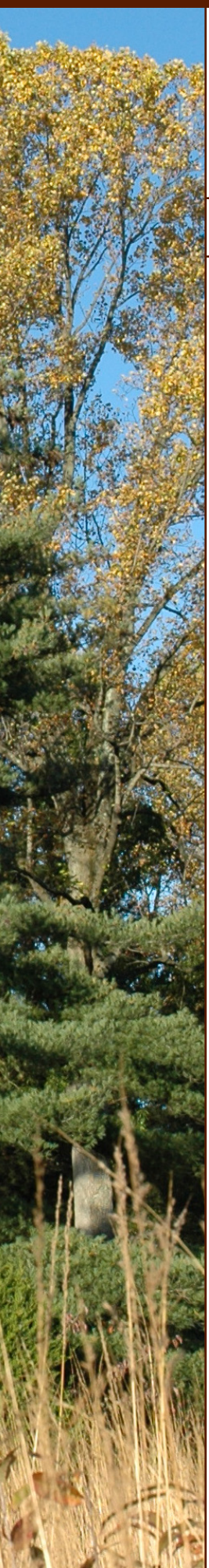
The Living Memorials Project. The Forest Service is supporting a network of people and places dedicated to the memory of those who were lost on September 11, 2001. With congressional support, 49 gardens and parks have been established, helping to restore hope and foster healing. The projects have become models and catalysts for hundreds of new projects, large and small, across the Nation and worldwide. Its on-line tools and resources have been tapped more than a million times, helping planners, designers, residents, and investors with local initiatives. Web-site visitors can learn where to visit living memorials, or find ideas and resources to create their own special places (www.livingmemorialsproject.net). The project has transcended 9/11, motivating people to create green spaces that draw in and engage visitors.

Steel beams from the World Trade Center were used at the Shrine of St. Joseph in Long Hill, NJ, to house bells that toll daily at the moment that thousands were lost. Trees and other plants are used to draw in the visitor and slow their pace to the point of reflection and remembrance.

Plans for the Future

The Urban and Community Forestry Program plans to increase the number of communities and people who benefit from the program. Focus areas will include these:

- Tracking baseline data on tree cover
- Replicating successful efforts to set community tree cover goals, and
- Increasing the number of communities that access available tools and technology.



Forests and the Economy

Background

Forests provide an abundance of goods and services we use every day: from the furniture in our homes, to the syrup on our pancakes, to many of the herbal products and drugs in our medicine cabinets. We are blessed with nearly unlimited opportunities to enjoy outdoor activities, whether it's fishing, hiking, bird watching, skiing, or simply enjoying the scenery.

Nearly a quarter of the Nation's wood harvest comes from Northeast and Midwest forests. The region's wood industries employ more than half a million people and produce more than $20 billion in income. The value of wood products shipped from the region reached nearly $117 billion in 2002. However, imported wood products, the growing costs of owning and managing forest land, aging manufacturing equipment, and development pressure is creating an uncertain future for America's wood industries.

On the positive side, new technology has opened the door to new opportunities. Poor-quality trees, once wasted, can now be used for a myriad of goods from composite products to clean-burning fuel. The benefits include cutting fewer trees, replacing or supplementing fossil fuels with wood fuels, and providing landowners with additional income, allowing them to invest more in taking care of their land.

Description and Accomplishments Related to Forests and the Economy

Economic Action Programs (EAP). Base funding ended on September 30, 2005; however, six congressional earmarks totaling $2.4 million were funded in fiscal year 2006. Projects include a tourism program in northwestern Pennsylvania, design of a prototype of X-ray scanning equipment to identify log defects, and a project to make New England wood products businesses more competitive.

In 2006, Northeastern Area staff worked with cooperators to complete existing grants, which include an Iowa venture to design and construct recreation cabins from white oak; an All Terrain Vehicle Trail Feasibility Study in Nicholas County, West Virginia; and a Wisconsin feasibility study of uses and markets for pine straw in the Great Lakes region.

Wood Education and Resource Center

The Wood Education and Resource Center (WERC), which is managed by the Northeastern Area and located in Princeton, West Virginia, emphasizes the following goals:

- Interaction and information sharing within the forest products community
- Sustainable production of goods from eastern hardwood forests
- A skilled, reliable, safety-conscious workforce
- More efficient ways to manufacture and use wood

WERC accomplishments include the following:

- Completed a new 3,500-square-foot training annex seating 50 people. Sessions included Lean Manufacturing, Diversity Management, and Profitability. WERC will continue to meet training goals in partnership with the Sloan Wood Products Center at Virginia Tech University.
- Initiated its second annual grants competition for State forestry agencies, hardwood-using industries and associations, service providers, and nonprofit organizations. WERC approved 28 of 51 proposals adding up to about $1.4 million of the $1.7 million in total projects that WERC funded in fiscal year 2006. Projects focus on using biomass from urban wood waste, poor-quality trees, and trees killed by invasive species to produce energy or products. Feasibility studies are planned at John Hopkins University, seven breweries, and Anne Arundel County, Maryland's landfill.
- Forged new partnerships with organizations such as Dovetail Partners, Minnesota Wood Campaign, Inc., and several universities and businesses.
- Awarded more than 50,000 square feet of WERC manufacturing space to the successful bidder, Accurate Millworks, Inc. The company uses locally grown basswood and yellow poplar to produce

In fiscal year 2006, WERC awarded grants totaling $1.7 million and competitively leased the facility's rough mill and shop, which includes more than 50,000 square feet of manufacturing space.

window shutter and blind components, and employs about 20 people.

- Continued a cooperative agreement with the Architectural Woodwork Institute to assess whether national skill standards for wood manufacturing would benefit the industry. Standards would apply to employers, employees, job seekers, educators, trainers, and labor representatives. National manufacturing associations, educators, and producers are helping to review and evaluate standards from other industries. The Forest Service helped draft a strategic plan, which was well received by industry.
- Continued to develop an Internet-based training information system allowing wood industries to search for opportunities by subject, cost, location, and other criteria. The Iowa Limestone Bluffs RC&D, under a cooperative agreement with the Forest Service, is working on the project in cooperation with an experienced firm, which has done the following:
  - Developed a means to identify training providers and trainee needs.
  - Conducted nearly 100 surveys with major training providers, human resources specialists, and industry representatives to refine system operation and services.
  - Initiated a due diligence search for existing software systems that have features or functionality similar to what is proposed.

  A final request for proposals will be sent to information technology vendors.
- *Electronic Commons*. Funded through a cooperative agreement with Northern Initiatives, a nonprofit organization in Marquette, Michigan, this project demonstrates the use of media such as the Internet and videoconferencing for technology transfer. The Eastern and Southern Regions of the National Forest System are cooperating on the project.
  Northern Initiatives funded eight projects across the country. It retained the Center for Technology in Government at SUNY–Ithaca (www.ctg.albany.edu) to guide the projects and capture lessons learned. The University of Minnesota–Duluth offered the first program, a "Webinar" on evaluating and preserving historic wood structures.

Hardwood logs ready to be sawn into usable products. The Cessna sawmill is located in Bean's Cove, PA.

- *Log Bucking Project*. The Hardwood Value Improvement Project is part of a cooperative agreement between the Ohio Forestry Association and WERC. Set as a "train the trainer" program, 28 eastern hardwood region States contracted with four regional coordinators to train instructors who, in turn, train loggers. For more information, visit www.hardwoodvip.org.

Wood in Transportation Program

Base funding for this program ended on September 30, 2004. Northeastern Area staff has been working with cooperators to complete projects. Highlights include the following:

- *Oliver Road Timber Bridge, Michigan*. The new bridge replaced two deteriorating culverts. During the planning phase, workers discovered the Hungerford's crawling water beetle, an endangered species. The Conservation Resource Alliance, Emmet County Road Commission, Northwest Design Group, Great Lakes Ecosystems Consulting Services, U.S. Fish and Wildlife Service, U.S. Forest Service, and others worked to protect beetle habitat.
- *Annual Student Design Competition*. Cosponsored with the Southwest Mississippi RC&D Council and other partners for more than 10 years, this contest offers college students an opportunity to design and build a model bridge primarily from wood. The contest illustrates that wood can be a cost-effective, viable bridge material, generates innovative designs, and fosters an appreciation of wood's engineering capabilities and structural qualities. This will be the last year for the competition. Visit: www.msrcd.org/bridge.htm for more information.

Grey Towers National Historic Site

Background

Grey Towers National Historic Site in Milford, Pennsylvania, is the ancestral home of the first chief of the U.S. Forest Service, Gifford Pinchot. Born into wealth and endowed with imagination and a love of nature, Pinchot was one of America's leading conservation advocates at the turn of the 20th century. After studying in France, he was one of the first to bring the concept of forest management to the United States. The French château mansion, set on 102 acres in the heart of the Pocono Mountains, was donated to the public by the Pinchot family in 1963 and dedicated by President John F. Kennedy. It is the only Forest Service-run national historic site.

Description

Grey Towers delivers a conservation message with help from public and private partners, keeping Pinchot's legacy alive with education, interpretation, leadership development, conference facilities, and historic preservation. Grey Towers contributes to the Northeastern Area's strategic goals while serving all of the agency's programs.

Accomplishments at Grey Towers

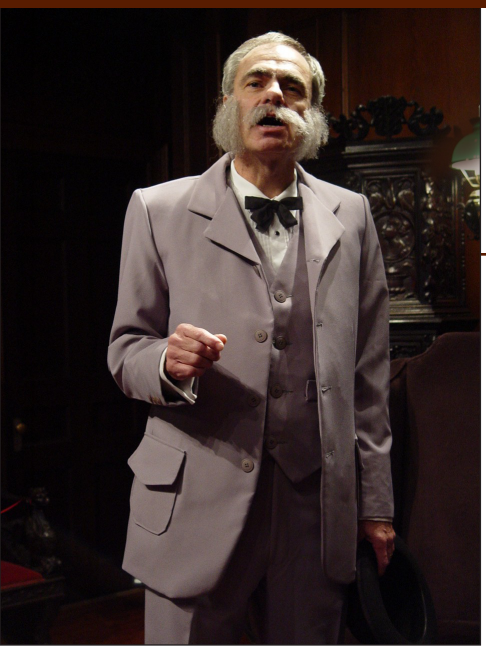
Leadership Programs and Conference Center

The Center hosted 29 groups with more than 1,600 attendees. A new conference management system allows credit card payments, launches a feedback and evaluation process, and establishes clear policies for alcohol and site use.

Grey Towers sponsored 19 Leadership Development Programs, 11 off site and 8 on site, serving 244 participants averaging 3 days each. The staff resumed its support of the National Policy Seminar and Senior Leader Program, expanded audiences for Senior Leader Coach Training, and was involved in coach selection and training and client coaching. The staff also created new opportunities, including the Leadership Legacy and Staff Officer's Program, and established the Ranger Academy at Grey Towers. Staff also set new operating policies for the Forest Supervisors Leadership Program and selected the first Edgar Brannon Conservation Fellow, named for the former director.

Interpretation and Conservation Education

- Hosted 11,327 visitors, giving more than 900 tours of the mansion and gardens.
- Demonstrated curriculum-based conservation education topics to over 2,250 children.



Director Richard Paterson as James Pinchot, a new interpretive program offered at Grey Towers.

- Introduced secondary education students to a new program, *A Day in the Life of a Forester*, designed to develop critical thinking on conservation issues.
- Expanded collaborations with the regional library, lands conservancy groups, and the Audubon Society.
- Generated more than $15,000 in gross revenue at the Grey Towers Interpretive Outlet in partnership with the Eastern National Forest Interpretive Association.
- Strengthened the link between the arts and nature by introducing field journaling, photography, music, and landscape painting programs.
- Introduced three new interpretive programs: *James Pinchot: America's First Forester; Cornelia Pinchot: Radical Feminist and Governors Wife*; and *The Pinchots and Downtown Milford*.
- Created and displayed historical photo exhibits throughout the mansion for visitors.
- Built the second annual Festival of Wood into a major event, bringing new partners and activities to entertain and inform 2,500 visitors. New exhibits featured wood products, the reintroduction of the American chestnut, invasive species, and an exhibit of Gifford Pinchot's wooden recreation items, such as fishing poles, snowshoes, and a canoe.
- Completed three interpretive brochures: *Volunteer Opportunities; Napoleon*, in honor of a statue on loan from the Smithsonian, commissioned by the Pinchots as a tribute to their French heritage; and *Laurel Hill Cemetery*, to highlight the former town cemetery on Grey Towers property, where several notables, including early Pinchot ancestors, are buried.

Volunteers and Partnerships

- Hosted seven Student Conservation Association interns, who provided valuable services while learning interpretive and horticultural skills. More than 40 volunteers brought vital services and community connections to Grey Towers, donating 1,500 hours of service worth in excess of $20,000, ranging from interpretive programs to landscape maintenance.
- Expanded its audience and program offerings via partnerships and collaboration.
- Sharpened relationships with several long-standing partners, improving financial and program accountability.
- Established new partnerships with the National Park Service Delaware Water Gap National Recreation Area via a Memorandum of Understanding, an agreement with the Heritage Preservation Training Center for rehabilitation of the swimming pool terrace, and an agreement with the agency's Denver Service Center for a utility upgrade project.
- Signed an agreement with the Milford Water Authority to prepare a prospectus for water delivery system upgrades, and prepared a special use permit for the Milford Water Authority on another project.
- Worked with a new support group of community members, Grey Towers Heritage Association, and sustained partnerships with American Reader's Theater, Pocono Arts Council, Forest History Society, Pinchot Institute for Conservation, Milford Borough Police, Student Conservation Association, Pike County Industrial and Commercial Development Authority, Milford Experimental Forest, Pennsylvania Game Commission, Pike County Quality Deer Management, and others. Grey Towers also provided support and work space to the Pennsylvania–New Jersey–New York–Connecticut Highlands Study and Forest Service Information Technology operations.

Site Management and Improvement

New signs, both on-site and off-site, beckon visitors to enjoy the mansion and grounds. With the Visitor Services Project complete, guests have a new parking area, pedestrian walkways, pavilion, and rest rooms. Safety and security has been modernized, allowing the Forest Service to make fuller use of the estate. The Forest Service, National Park Service Denver Service Center, Pennsylvania Department of Transportation, Pike County Industrial and Commercial Development Authority, and Commonwealth of Pennsylvania Redevelopment Assistance Capital Program celebrated at a ribbon-cutting ceremony.

Rehabilitation of the former swimming pool terrace with assistance from the National Park Service Historic Preservation Training Center will expand space for programs and other public uses. Other improvements include the following:

- Refurbished the Long Pool, walled cutting garden, historic apple trees, and other garden features.
- Catalogued more of the 11,000 artifacts, photographs, and materials in the collection, and accepted 5 new curatorial artifacts.
- Completed the Maintenance Facility Building and renovated the mansion garage as a storage facility.

New highway signs direct visitors to Grey Towers.

- Analyzed a dam breach and developed treatment recommendations.

Several safety-related improvements were made:

- Upgraded some electrical services and electrical components to code while improving electrical services throughout the site.
- Reestablished safety inspections for quarters.
- Determined code requirements for elevator maintenance and other tasks.

Grey Towers is now fully restored, open, and ready for business. A new business planning process was completed to guide changes in program direction and increase accountability.

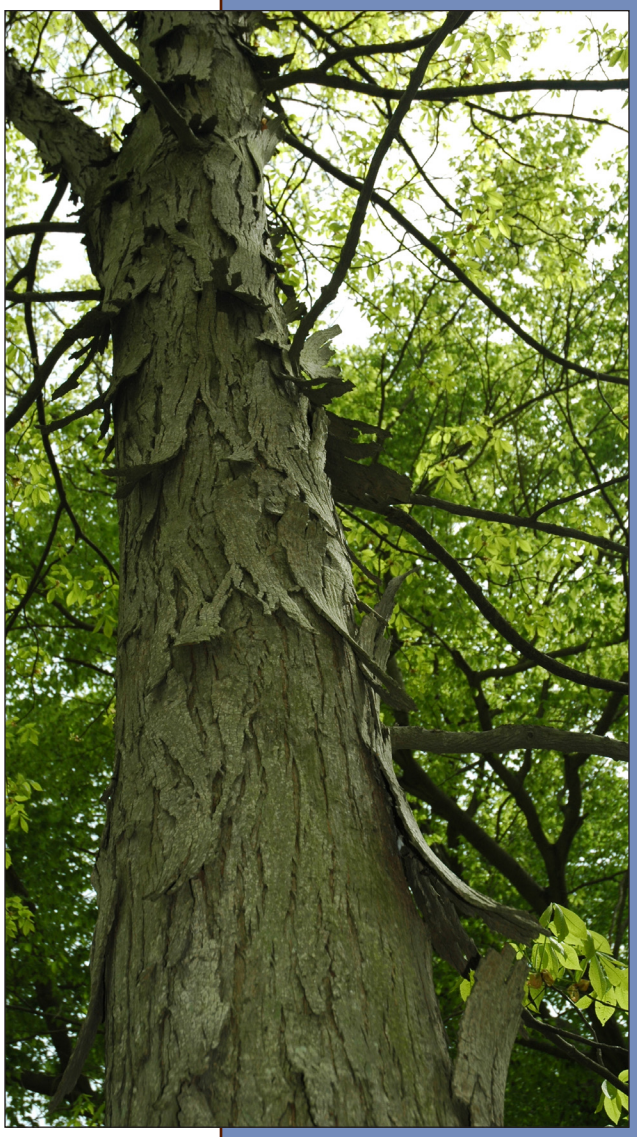
Taking Action Against Climate Change

More than 30 years after the energy crisis of the 1970s, alternative energy sources and ways to mitigate harmful emissions are back on the scientific and political agenda.

Researchers believe that burning fossil fuels, loss of forest land, and natural climate variations all contribute to the problem of rising global temperatures. Former Forest Service Chief Dale Bosworth said: "Science has shown that greenhouse gas buildups are already having serious consequences. … Species are shifting range, forest density is increasing, and disturbance regimes are changing."

How could a warmer climate affect Northeastern and Midwestern forest resources? Research points to the following changes:

- Longer growing season
- More atmospheric CO_2, spurring plant growth—at least in the short term
- Species changes: more oak, hickory, and pine; less aspen, maple, beech, and birch
- More frequent extreme weather events: unseasonable freezes or thaws, droughts, ice storms
- More wildfires
- Greater incidence and severity of insect and disease attacks
- Shifts in bird populations



Several Federal agencies, including the Forest Service, are working on the issue of climate change. Trees and forests reduce greenhouse gases by "sequestering" carbon, locking it up in wood, soil, and leaves until it is burned or released during decay. Scientists estimate that forests and wood products in the United States sequester about 11 percent of the greenhouse gases the country produces.[2] Northeastern and Midwestern forests store more carbon than any other region of the country.

[2] USDA Forest Service. Washington, DC.

The Pennsylvania Department of Conservation and Natural Resources, after learning that the State emits 1 percent of the earth's greenhouse gases and the third highest amount of any State, established a forest management program with carbon sequestration as a central consideration.[3]

The Northeastern Area provides technical and financial assistance to projects that will ultimately increase carbon sequestration or delay the release of carbon into the atmosphere. The following actions can mitigate climate change.

- *Managing forests sustainably*. Well-spaced trees are healthier, grow faster, are of higher quality, live longer, and are less susceptible to insects, diseases, and extreme weather. Sound management increases environmental benefits. Minnesota has set a goal to write Stewardship Plans for 1 million acres by 2015.
- *Encouraging greater use of environmental credits*. Credits represent actions taken to increase ecosystem benefits. For example, utilities that emit harmful gases can offset some of their emissions by planting trees or managing forests to boost carbon sequestration.
- *Manufacturing wood products using the latest technology*. Used in products such as furniture and buildings, trees sequester carbon indefinitely. More efficient manufacturing processes mean fewer trees need to be harvested.
- *Recycling*. Wood waste from manufacturing and demolition stays out of landfills where it would otherwise burn or decay. Developing new uses for wood waste will help to achieve this goal.
- *Converting to clean-burning wood-fired equipment*. New-generation boilers and generators work especially well in facilities such as schools and hospitals. A study by the U.S. Departments of Energy and Agriculture showed that biomass can displace 30 percent of today's petroleum.
- *Producing more ethanol*. Ethanol made from wood biomass: (1) reduces fossil fuel usage (2) helps engines burn more cleanly; (3) uses a renewable resource; and (4) boosts landowner income, increasing the likelihood that they can afford to invest in their forests.
- *Minimizing the loss of forests and open space to development*. "Smart growth" yields livable communities, yet retains forests and their carbon-sequestering benefits. The Forest Legacy Program is helping to conserve important forest lands threatened by development, which will continue to sequester carbon, use carbon dioxide, and release oxygen to the atmosphere.
- *Enhancing urban forest resources*. Healthy well-placed trees around homes and businesses provide multiple benefits. They help clean city air, slow storm water runoff, and directly absorb carbon. In addition, by providing shade in summer and shelter in winter, trees also save energy thus reducing carbon dioxide produced by burning fossils fuels. Nearly 40 percent of the cities and towns in the Northeast and Midwest received urban forestry assistance in fiscal year 2006.

[3] Pennsylvania Department of Conservation and Natural Resources.

- *Reforesting areas to enhance the environment.* Volunteers have planted an amazing 5,336 miles of new trees along waterways in Pennsylvania, Maryland, and Virginia since 1996. More forests equal more carbon sequestration.
- *Preventing wildfires and aggressively attack the fires that do start.* Reducing the number of fires and launching effective attacks to keep fires small keeps smoke from adding enormous amounts of carbon to the atmosphere. The staff assisted more than 7,000 communities and rural fire departments in fiscal year 2006.
- *Monitoring the region's forests*, acting quickly to minimize damage from insects, diseases, and other events. Fewer dead trees mean less carbon from decay.

The actions we take now to create clean, sustainable sources of energy, minimize our dependence on fossil fuels, and keep our forests green and growing will go a long way toward creating a healthier environment for us and our descendants.

Appendixes

Appendix I. Investment in State and Private Forestry Programs by the Northeastern Area

	FY 2004	FY 2005	FY 2006
		(Millions of Dollars)	
Cooperative Programs			
Forest Health Management			
Federal Lands	$10.4	$7.6	$7.8
Cooperative Lands	21.3	17.8	19.0
Subtotal–Forest Health	31.7	25.4	26.8
Cooperative Fire Protection			
State Fire Assistance	7.7	6.9	6.9
Volunteer Fire Assistance	2.0	2.3	2.3
Subtotal–Cooperative Fire	9.7	9.2	9.2
National Fire Plan	11.8	8.9	10.9
Cooperative Forestry			
Forest Stewardship	14.1	11.5	12.1
Urban and Community Forestry	14.3	10.9	10.5
Forest Legacy	31.2	27.6	29.0
Economic Action	9.5	7.8	3.4
Subtotal–Cooperative Forestry	69.1	57.8	55.0
Subtotal–Cooperative Programs	**$122.3**	**$101.3**	**101.9**
Other Programs Administered by NA			
Grey Towers	2.5	2.3	2.3
Forest Health Technology Enterprise Team	1.3	1.3	1.6
Reimbursable Funded Projects	2.2	2.8	1.4
Subtotal–Other Programs	6.0	6.4	5.3
Total, All Programs	**$128.3**	**$107.7**	**$107.2**

Appendix II. Selected Facts and Accomplishments

Selected Facts
Northeast and Midwest United States

Population (2000 Census)	121,238,747
Acres of Forest Land [1]	169,684,000
Acres of Non-Industrial Private Forest (NIPF) Land [1]	113,489,000
Number of NIPF Landowners [2]	4,800,000
Total Acres of Land Under State Fire Protection	221,625,000
Number of Volunteer Fire Departments	15,138
Communities Potentially Eligible for Assistance	11,323
Number of Cities and Towns reported by States	9,066
Forest Based Employment [3]	614,000
Forest Based Earnings [3]	$22.6 billion
Average State Economic Impact of Forestry (by rank) [3]	Four
State Forestry Budget (20 States and DC) [4]	$266,761,000

Selected Accomplishments —Fiscal Year 2006

Stewardship Plans Prepared (current year)	7,469
Acres Under Stewardship Plans (current year)	566,177
Acres Under Stewardship Plans (1997—2006)	7,379,077
Technical Assists to Landowners	63,346
Volunteer Fire Departments Assisted	3,093
Communities Assisted–State Fire Assistance	7,412
Acres Surveyed for Forest Health	233,892,851
Acres Treated for Insect Disease and Damage	623,352
Cities and Towns Participating in Urban and Community Forestry Program	3,519
Volunteer Service Hours—Urban and Community Forestry	525,147
Acres Protected by Forest Legacy (all years)	990,790

---

[1] W. Brad Smith. 2002. Forest resources of the United States, 1997. Forest Service, U.S. Department of Agriculture.

[2] B.J. Butler and E.C. Leatherberry. 2004. America's family forest owners. Journal of Forestry.

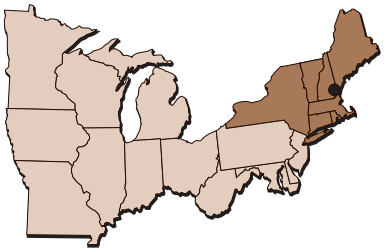
[3] U.S. Department of Commerce.

[4] National Association of State Foresters 2002 report: state forestry statistics. Washington, DC. 28 p.

Northeastern Area State and Private Forestry USDA Forest Service

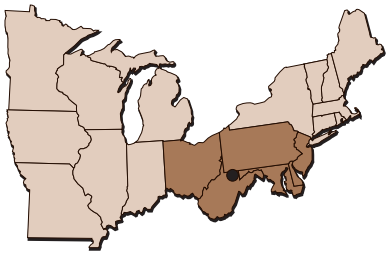
Headquarters Office

11 Campus Boulevard, Suite 200
Newtown Square, PA 19073-3246
610-557-4103

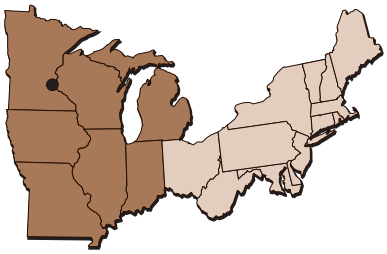


Field Offices

Durham, New Hampshire
271 Mast Road
Durham, NH 03824
603-868-7600



Morgantown, West Virginia
180 Canfield Street
Morgantown, WV 26505
304-285-1541



St. Paul, Minnesota
1992 Folwell Avenue
St. Paul, MN 55108
651-649-5243

Grey Towers National Historic Site

151 Grey Towers Drive
Milford, PA 18337
570-296-9634

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.